

IN THE CLAIMS:

Please amend claims 1, 12, and 21 as follows:

1. (CURRENTLY AMENDED) A method of part flow for a programmable logic controller logical verification system, said method comprising the steps of:

constructing a simulation model of a manufacturing line using a computer;

playing the simulation model by a PLC logical verification system on the computer and allowing a user to visually see flow of a part through the manufacturing line, wherein the PLC logical verification system dynamically interacts through input and output with the simulation model to verify a PLC code of the manufacturing line;

determining if the part flow represented in the simulation model is correct;

generating the PLC code if the part flow represented in the simulation model is correct; and

using the generated PLC code and implementing the manufacturing line according to the part flow simulation model.

2. (ORIGINAL) A method as set forth in claim 1 wherein said step of constructing comprises selecting a part generator.

3. (PREVIOUSLY PRESENTED) A method as set forth in claim 2 wherein said step of constructing further comprises generating the part with the part generator.

4. (PREVIOUSLY PRESENTED) A method as set forth in claim 3 wherein said step of constructing further comprises identifying part locations of the generated part within the manufacturing line.

5. (PREVIOUSLY PRESENTED) A method as set forth in claim 4 wherein said step of constructing further comprises testing the generated part at the part locations.

6. (ORIGINAL) A method as set forth in claim 1 wherein said step of constructing comprises constructing a record for the part.

7. (ORIGINAL) A method as set forth in claim 6 wherein the record has at least one resource.

8. (ORIGINAL) A method as set forth in claim 7 wherein the at least one resource has at least one capability.

9. (CANCELED)

10. (PREVIOUSLY PRESENTED) A method as set forth in claim 1 including the step of modifying the part flow represented in the simulation model if the part flow represented in the simulation model is not correct.

11. (CANCELED)

12. (CURRENTLY AMENDED) A method for application of a part flow for a programmable logic controller logical verification system, said method comprising the steps of:

constructing a simulation model of a part flow in a manufacturing line using a computer by representing a part and part locations of the manufacturing line;

playing the simulation model by a PLC logical verification system on the computer to move the represented part to and from the part locations within the manufacturing line and allowing a user to visually see flow of the represented part through the manufacturing line, wherein the PLC logical verification system dynamically interacts through input and output with the simulation model to verify a PLC code of the manufacturing line;

determining if the part flow represented in the simulation model is correct;

generating the PLC code if the part flow simulation model is correct; and

using the generated PLC code and implementing the manufacturing line according to the part flow simulation model.

13. (ORIGINAL) A method as set forth in claim 12 wherein said step of constructing comprises selecting a part generator.

14. (ORIGINAL) A method as set forth in claim 13 wherein said step of constructing further comprises generating a part with the part generator.

15. (PREVIOUSLY PRESENTED) A method as set forth in claim 14 wherein said step of constructing further comprises identifying part locations of the generated part in the manufacturing line.

16. (PREVIOUSLY PRESENTED) A method as set forth in claim 15 wherein said step of constructing further comprises testing the generated part at the part locations.

17. (ORIGINAL) A method as set forth in claim 12 wherein said step of constructing comprises constructing a record for the part.

18. (ORIGINAL) A method as set forth in claim 17 wherein the record has at least one resource.

19. (ORIGINAL) A method as set forth in claim 18 wherein the at least one resource has at least one capability.

20. (PREVIOUSLY PRESENTED) A method as set forth in claim 1 including the step of modifying the part flow represented in the simulation model if the part flow represented in the simulation model is not correct.

21. (CURRENTLY AMENDED) A method for application of a part flow for a programmable logic controller logical verification system, said method comprising the steps of:

constructing a simulation model of a part flow in a manufacturing line using a computer by selecting a part generator, generating a part with the part generator, and identifying part locations of the part in the manufacturing line;

playing the simulation model of the part flow by a PLC logical verification system on the computer to move the generated part to and from locations within the manufacturing line and allowing a user to visually see flow of the part through the manufacturing line by a change of

color at any of the part locations, wherein the PLC logical verification system dynamically interacts through input and output with the simulation model to verify a PLC code of the manufacturing line;

determining if the part flow represented in the simulation model is correct;

modifying the part flow represented in the simulation model if the part flow represented in the simulation model is not correct;

generating the PLC code if the part flow simulation model is correct; and

using the generated PLC code and implementing the manufacturing line according to the part flow simulation model.